

Week 5: Feb 6-12	Mathematics and the arts introduction	Reflections: Feb 10, 8 PM Responses: Feb 12, midnight
------------------	---------------------------------------	--

EDCP 553 Week 5, Feb 6 -12, 2024

Week 5: Developing mathematics pedagogies that integrate embodied, multisensory, outdoors and arts-based modalities

In preparation for the major project for this course, we will be discussing ways that we can design embodied, multisensory teaching and learning experiences at a variety of scales, both indoors and out, that integrate with curricular insights, topics and approaches in mathematics teaching. Is it enough to get students moving and making -- or is there more to integrating the arts and embodiment in math class?

Introduction: This week's introduction is a video! [Here's the link](#) (it's approximately 10 minutes). Note that this was recorded for the 2022 cohort class, but everything still applies – except perhaps for switching up the reading groups (mentioned at the end), which we can decide on for ourselves.

Viewing: [Sarah Chase: Dancing combinatorics, phases and tides \(long version 13:35\)](#);

[New teachers riff on Kandinsky in Binary](#) (5:00)

Activity: Please watch both the short films in the "Viewing" section (Sarah Chase and Kandinsky in Binary). Choose one of the activities shown in the films and try it: either (a) Sarah Chase's illustration of moving '3 against 2' (at around 6:00 mark of the film), or (b) Ali and Colin's activity of representing binary numbers as concentric circles with colouring, and doing arithmetic with this.

For whichever activity you choose:

- Try out at least 3 ways of extending the activity to explore an extended mathematical concept with it. (For example, you might try Sarah Chase's activity with numbers other than 3 and 2, and consider why you would choose particular pairs of numbers to explore. For Ali and Colin's activity, you might explore other bases besides base 3, other numbers besides 19 and 7, other operations besides addition, ...) Think about ways that the activity and its extensions might help you explore a mathematical topic through embodied, arts-based activities.
- Use the activity and its extensions (or any other embodied, arts-based activity that you have tried in this program or your classroom) and come up with **a brief sketch of a 'curriculum idea' integrating the extended activity together with more typical math class activities** like writing, using mathematical notation, mini-lectures, problem-solving, etc. This could be considered a starting point in designing a lesson or short unit of work in mathematics for your students.
- Your sketch should be written in point form as a brainstorming 'sketch' that you could fill in with more details later. If it is helpful, you can organize your sketch under headings like the following:
Issues/ Guiding questions/ The story/ Integrating embodied learning & other learning/ Possible

extensions/

Readings:

- a) [Dietiker: What math education can learn from art](#)
- b) [Kelton & Ma: Reconfiguring math settings with whole-body, multi-party collaborations](#)
- c) [Riley et al: Movement-based mathematics without compromising learning](#)